**REPORT OF RCRA COMPLIANCE EVALUATION INSPECTION**

AT
CORN, LP
1303 East Highway 3
Goldfield, IA 50542
(515) 825-3933
EPA ID Number: IAR000517458 (Administrative Number Only)

ON

November 7-8, 2012

BY

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region VII
Environmental Services Division

## 1.0 INTRODUCTION

At the request of the Air and Waste Management Division (AWMD), I conducted a RCRA Compliance Evaluation Inspection (CEI) at the Corn, LP facility located at 1303 East Highway 3 in Goldfield, Iowa, on November 7-8, 2012. My CEI was initiated as the result of two fires at the Wright County Waste Transfer Station. Both fires reportedly involved a mixture of general trash and Corn, LP waste. Corn, LP is an ethanol producing plant located in Goldfield, IA. This CEI was conducted under the authority of Section 3007(a) of RCRA, as amended. During my CEI, I collected the information and data necessary to determine compliance with the applicable federal regulatory and statutory requirements. This inspection report and attachments present the results of the CEI. The CEI was conducted as a Level B Multimedia Inspection, and the Region 7 Multimedia Screening Checklist is included as attachment 1. Based on information obtained during the course of the inspection, I inspected Corn, LP as a Conditionally Exempt Small Quantity Generator (CESQG) generating less than 100 kg of hazardous waste per month. Corn, LP is a small quantity handler of less than 5,000 kg of universal waste lamps, and is also a generator of used oil.

## 2.0 PARTICIPANTS

Corn, LP
Mr. Andrew S. (Andy) Miller, Plant Manager

Environmental Protection Agency (EPA)
Mr. Glenn Cherry, Civil Investigator/NOWCC/SEE

## 3.0 INSPECTION PROCEDURES

Prior to entering the Corn, LP facility, I conducted a visual reconnaissance of the facility grounds, searching for areas of concern observable from the East Highway 3. I identified no environmental issues or concerns during this preliminary examination.

I arrived unannounced at the Corn, LP facility on the morning of November 7, 2012, at approximately 0830 hours. I stopped at a guard shack at the main entrance to the Corn, LP facility. I identified myself to the uniformed guard, informed him that I was at Corn, LP to conduct an inspection, and asked to see the plant manager. A short time later Mr. Andy Miller responded to my location. I gave a business card to Mr. Miller, and briefly explained the reason for my visit. Mr. Miller and I then went to his office in a building near the center of the compound.

I presented my credentials to Mr. Miller and explained in detail the purpose of my CEI, and the procedures that I would follow. I presented Mr. Miller a copy of RCRA Section 3007(a), which provides the authority for conducting RCRA inspections. I also presented Mr. Miller a copy of Title 18 U.S. Code, Sections 1001 and 1002, which provide penalties for providing false and/or misleading information to Federal representatives, and for the possession and use of fraudulent documents. Mr. Miller reviewed and retained both of these documents for Corn, LP's records. I followed this with an explanation to Mr. Miller of how important it was for me to collect truthful and accurate information, and that he should inform me if he was not certain of the information that he was providing, or if he was unable to answer a question. I next explained the EPA policy regarding the collection of confidential business information (CBI) to Mr. Miller. I stated that Corn, LP could claim any information or documentation as confidential during or after the completion of the inspection. I explained that, at the conclusion of the inspection, Corn, LP would be provided with a copy of the EPA Confidentiality Notice, with which a CBI claim could be made for any or all of the information and documentation collected during the inspection.

At the conclusion of the CEI, I summarized and reviewed my findings and recommendations with Mr. Miller. Next, I provided Mr. Miller with a Confidentiality Notice, which he signed indicating that all information that I had obtained during my CEI was confidential business information because of anticipated ligation concerning the fires at the Wright County Waste Transfer Station at Clarion, Iowa (attachment 2). Mr. Miller signed a Receipt for Documents and Samples as acknowledgment of the copies of documents that Corn, LP had provided to me (attachment 3). My comments and observations are contained on the RCRA checklists (attachment 4). **Photo 1** is a picture of the site identification photo cover sheet, and is the starting photo for my inspection. This photo and a picture of the Corn, LP sign at the entrance were not claimed as confidential business information, **photo 2**.

The following inspection documents and compliance assistance handouts were left with Mr. Miller:

- EPA *Notification of Regulated Activity*
- EPA *Publications for Small Business*
- EPA *Managing your Hazardous Waste, a Guide for Small Business*
- EPA *Compliance Assistance Centers* handout
- EPA Information Sheet: *Commercial Motor Vehicle Transportation System Security & Safety-CCMV Transportation Security Planning*
- EPA Homeland Security Bulletin: *US EPA Region 7, December 2001, Security Awareness for Agricultural/Industrial Facilities, Pipelines, Transporters, Utilities, Warehouses of Chemicals*
- EPA *Office of Enforcement and Compliance Assurance Information Sheet & US EPA Small Business Resources* handout
- Iowa Life Changing pamphlet
- Iowa Waste Reduction Center pamphlet
- EPA *Managing Used Oil, Advice for Small Businesses* guidance document
- EPA *Does Your Facility Generate Automotive Service Wastes?* Informational pamphlet
- EPA *Environmental Fact Sheet, Some Used Lamps Are Universal Waste, guidance document*
- Confidentiality Notice (completed original)
- Receipt for documents (completed original)

## 4.0 FACILITY DESCRIPTION

Corn, LP is on the eastern edge of Goldfield, Iowa (see area map, attachment 5). The Corn, LP facility covers approximately 70 acres, with metal fabricated buildings, bins and silos for solid material, and tanks for liquid (see satellite images, attachment 6). The tanks range up to a capacity of 1,000,000 gallons.

### 4.0.1 Facility Operations

Corn, LP is a manufacturer of non potable ethanol that is used as a fuel. A by-product of the ethanol manufacture is corn silage that is converted to animal feed. Corn, LP operates twenty-four hours per day, seven days a week and has approximately 39 employees. Corn, LP uses what is called a dry mill process to manufacture ethanol from corn (attachment 7). The corn is milled to the desired consistency, liquid is added, and the mixture is cooked. The resulting mash is fermented, distilled, dehydrated, purified, and becomes ethanol. The corn waste is processed and sold as animal food. The process chemistry for the Corn, LP ethanol manufacture is shown in attachment 8. A flow chart for the Corn, LP manufacturing process is included as attachment 9.

### 4.0.2 RCRA Status

Corn, LP was established at this location in December of 2005. Corn, LP has not notified as a generator of hazardous waste. During my CEI, I determined that Corn, LP generates corrosive waste with the EPA waste code of D002, and ignitable waste with the EPA waste code of D001 through their on-site quality control laboratory testing. Corn, LP is a Conditionally Exempt Small Quantity Generator (CESQG) generating less than 100 kg of hazardous waste per month. Corn, LP is a small quantity handler of universal waste lamps that are recycled, and is also a generator of used oil.

## 5.0 FINDINGS AND OBSERVATIONS

### 5.0.1 Fly Ash

During my CEI, Mr. Miller informed me that there are two waste streams directly related to the production of ethanol; fly ash and combustor tram. Mr. Miller stated that low sulfur coal from Paddle Wheel, Wyoming is burned in a bubbling fluidized bed combustor. Fly ash rises with the flue gasses, and is routed to a bag house where it is captured as a solid. The solid fly ash is stored in a thirty-six foot high silo which is mounted on top of the fly ash loadout building, **see photo 10**. According to the Corn, LP Solid By-Product Management Plan (SBPMP), the silo is the only fly ash storage area on Corn, LP property (attachment 10). Corn, LP also requires that all trucks hauling fly ash must be covered. According to 40 CFR 261.4(b) an (b)(4), fly ash from the combustion of coal or other fossil fuels is not a hazardous waste.

I asked Mr. Miller how Corn, LP classified the fly ash, and he stated that it is classified as non hazardous. I asked Mr. Miller how Corn, LP arrived at that classification, and he stated that it is based on testing. Mr. Miller provided me with two laboratory analytical reports on the Corn, LP fly ash. The first analytical report from TestAmerica is for Total Metals, SPLP Metals, and TCLP Metals, and is dated January 4, 2012. The analytical report documents analysis findings for samples collected October 31, 2011 (attachment 11). The second analytical report from TestAmerica is dated July 31, 2012, and is an amended report for the analysis of arsenic and beryllium (attachment 12).

The Corn, LP SBPMP states in part, "Fly ash transported from Corn, LP is either hauled to an end user for immediate beneficial use or is stockpiled by an intermediate contractor for future beneficial use or disposal. Fly ash shall not be stored in the stockpile for more than 6 months." The SBPMP also states in part, "Lund Construction is currently the only entity authorized to stockpile fly ash produced by Corn, LP."

According to a phone complaint received from Mr. Joel Ellis of Eagle Grove, Iowa, Lund Construction picks up fly ash from Corn, LP and from Ag Processors in Eagle Grove. Mr. Ellis also claims that the fly ash is stored at Lund Construction property at 250$^{th}$ Street and Boone River just northwest of Eagle Grove. During a telephone conversation with me, Mr. Ellis stated that he believed that Lund Construction was also burying some of the fly ash in a hole near the Boone River on Lund Construction property (see Wright County Waste Transfer Station Memo Report).

I also talked by phone to Mr. David Miller, Environmental Specialist, from the Mason City office of Iowa Department of Natural Resources (IDNR). Mr. Miller stated that he has been conducting an investigation into a formal complaint filed with IDNR in regards to alleged illegal disposal of fly ash by Lund Construction. Mr. Miller e-mailed me a copy of a DNR Request for Information – Fly Ash Management Practices, which was sent to Mr. Gary Lund of Lund Construction (see Wright County Waste Transfer Station Memo Report).

According to Mr. Jim Meade of the Wright County Waste Landfill Authority, fly ash from Corn, LP is periodically received at the Wright County Waste Transfer Station, and is transferred to the Landfill of North Iowa for disposal. Mr. Mike Ling, special investigator for the Wright County

insurance provider, informed me that he had sampled material from the fire scene at the Wright County Waste Transfer Station that had been involved in the second fire, and from Corn, LP waste at the Landfill of North Iowa. According to the laboratory report of the analysis, sample 001A from the waste transfer station, and sample 002A from the Landfill of North Iowa, are both described as fine powder (see Wright County Waste Transfer Station Memo Report). However, Mr. Andy Miller stated that all Corn, LP fly ash is picked up by Lund Construction, and no fly ash is sent to the Wright County Waste transfer station for disposal at the Landfill of North Iowa.

### 5.0.2 Combustor Tram

During my visual inspection, I observed a large coal combustor attached to a large boiler, **see photos 7, 8, and 9**. Crushed coal from one silo and crushed limestone from another silo are fed into the combustor at the same time. Mr. Miller informed me that the combustor heats the boiler with coal burned in a bubbling fluidized bed which keeps the coal in suspension so that it will all burn. He also informed me that crushed limestone is from a limestone quarry at Humboldt, Iowa. The limestone contains calcium oxide which absorbs sulfur dioxide emissions to reduce the amount of sulfur released to the atmosphere. As the crushed limestone leaves the bubbling fluidized bed, it falls onto a shaker screen, see **photos 16 and 17.** These photos show a drawing of the process that was on the wall in Mr. Miller's office.

Mr. Miller states that, at the point of generation, the crushed limestone has been through the combustor chamber where the temperature reaches approximately $1500^0$ F and is now called combustor tram. The combustor tram falls through the combustion chamber to a shaker screen. The shaker screen agitates the combustor tram and the smaller particles fall through the screen and are captured below. Mr. Miller stated that this finer material is ceramic sand, which is used to replenish the bubbling fluidized bed in the combustor. The larger pieces of combustor tram vibrate from the screen and fall into a small hopper at the base of the combustor, **see photo 3**. The combustor tram is taken to a 20-yard dumpster to the north of the combustor and boiler, **see photos 6 and** 7. A dumpster is visible to the north of the combustor unit (see satellite image, attachment 6). This is approximately the same location as the dumpster that I observed during my CEI. Because the Wright County Waste Transfer Station and the Landfill of North Iowa will no longer accept the Corn, LP combustor tram, a quantity has been dumped onto the ground pending approval of disposal options, **see photo** 4. **Photo** 5 is a close-up showing the texture of the combustor tram. Most of the combustor tram is gravel-size, but some is the size of small rock. Mr. Miller stated that the combustor tram is normally picked up by a company called Trash Man, and taken to the Wright County Waste Transfer Station. I called the Trash Man office in Eagle Grove at 515-448-3654, and was told that Trash Man has an account with Corn, LP. The type of material picked up was not known by the office staff, but a driver who was in the office stated that it looked like gravel to him, and that it was in a dumpster on the north side of the Corn, LP property.

I asked Mr. Miller how Corn, LP classified the combustor tram, and he stated that it is classified as non hazardous waste. I asked Mr. Miller if Corn, LP had tested the combustor tram, and he stated that the combustor tram had been analyzed for Corn, LP by TestAmerica subsequent to the fire at the Wright County Waste Transfer Station (see analysis report, attachment 13).

At the time of my CEI, contractors were at Corn, LP conducting preliminary work to convert Corn, LP to natural gas. When that change-over is complete, Mr. Miller stated that Corn, LP will no longer generate either fly ash or combustor tram.

### 5.0.3 Used Oil

During my CEI, I asked Mr. Miller if Corn, LP generated used oil. Mr. Miller stated that used oil is generated during servicing of the equipment. During my visual inspection, I observed a 250 gallon tote containing approximately 220 gallons of used oil. The used oil accumulation tote was in good condition with no apparent leaks, and was labeled as used oil, **see photo 12**. I asked Mr. Miller what Corn, LP did with the used oil, and he stated that it is picked up by Jebro Incorporated, and is burned for energy recovery (attachment 14). During my record review, I determined that Jebro picked up 275 gallons of used oil on 10/13/09, 370 gallons on 5/11/10, 400 gallons on 5/3/11, and 270 gallons on 3/19/12.

### 5.0.4 Lab Waste

During my visual inspection, I observed that Corn, LP conducts quality control analysis in their on-site lab. The wastes from the analysis are corrosive liquid, and flammable liquid. The wastes are accumulated in glass bottles under a fume hood along with reagents that are still product, **see photo 2**. When the accumulation container becomes full, it is placed into a fire-rated cabinet until it is picked up for disposal, **see photo 15**. Inside the fire cabinet I observed two glass bottles with an approximate capacity of 250 milliliters. One container was labeled as hazardous flammable, **see photo 13**, and the other was labeled as hazardous corrosive, **see photo 14**. Mr. Miller stated that approximately once a year the hazardous waste chemicals are lab packed as hazardous waste, and are disposed through Heritage-WTI (see manifests, attachment 15).

### 5.0.5 Spent Parts Washer Solvent

During my CEI, I asked Mr. Miller if Corn, LP had any parts washers. Mr. Miller replied that they had an aqueous parts washer in the maintenance shop, **see photo 11**. I asked Mr. Miller what type of cleaner was used in the parts washer, and he stated that Corn, LP used Smartwasher Ozzymat FL-3 (see MSDS, attachment 16). I asked Mr. Miller how Corn, LP classified the parts washer waste, and he stated that they classify it as non hazardous waste based on product knowledge obtained from the MSDS form.

### 5.0.6 Cardboard

During the initial interview, Mr. Miller informed me that Corn, LP generates cardboard from packing and packaging material. He further stated that the cardboard is recycled through the Trash Man recycling program.

### 5.0.7 Office Paper

During my CEI, I asked Mr. Miller what Corn, LP did with their waste office paper. Mr. Miller stated that the waste office paper is classified as non hazardous waste, and is disposed with the general trash through Trash Man.

### 5.0.8 Scalper Overs

During my initial interview, Mr. Miller stated that Corn, LP generates what is called "scalper overs." Mr. Miller described the scalper overs as foreign materials that are removed from the corn before it is milled. I asked Mr. Miller how Corn, LP classified the scalper overs, and he stated that it is classified as non hazardous waste based on product and process knowledge. I asked Mr. Miller what Corn, LP did with the scalper overs, and he stated that they are disposed through Mr. Matt Kellner of Livermore, IA.

### 5.0.11 General Trash

The general trash, consisting of office waste, food waste, and cleanup waste is collected in trash cans throughout the building. The trash cans are emptied into a dumpster which is picked up by Trash Man. The general trash is transported to the Wright County Waste Transfer Station, consolidated with other general trash, and disposed at the Landfill of North Iowa sanitary landfill.

## 7.0 SUMMARY

According to the investigative laboratory report obtained from Mr. Mike Ling, calcium oxide is present in samples (identified as Corn, LP waste) submitted by Mr. Ling. The laboratory analysis report also states, "Although calcium oxide, itself, is not combustible, when it is exposed to water or moisture, calcium oxide is converted to calcium hydroxide. This reaction is highly exothermic. MSDS documentation for calcium oxide reports that 'sufficient heat can be created during hydration to ignite paper, wood, rags or other combustible materials'. If the powder material, containing calcium oxide, is exposed to water or moisture, the temperature of the material will increase significantly. If combustible materials are present, ignition can occur."

According to the investigative laboratory report, the presence of moisture and combustible material are required (along with the Corn, LP waste) to cause the combustible material to ignite. When the waste transfer station personnel placed the Corn, LP waste on top of the combustible material, and the Corn, LP waste was exposed to moisture during the waste station cleanup, the three requirements for auto-ignition were present. Corn, LP disagrees with this possibility. Mr. Ling, Mr. Mead, and Mr. Rowland have described to me that the Corn, LP waste received at the Wright County Waste Transfer Station and at the North Iowa Landfill was a powder like substance. Mr. Ling, Mr. Meade, and Mr. Rowland also described the Corn, LP waste as fly ash. However, Mr. Miller claims that all Corn, LP fly ash is picked up by Lund Construction for beneficial reuse. Mr. Miller also claims that the Corn, LP waste sent to the Wright County Waste Transfer Station was general trash, and combustor tram which was picked up separately by Trash Man. Regardless, it appears that the only hazardous waste generated by Corn, LP is the lab waste.

Attachment 17 is a Handler Information Report. Attachment 18 is a photo custody report. Attachment 19 is a photo log. Attachment 20 is copies of photos taken during my CEI. Attachment 21 is the photo contact sheets. **Photo 18** is a site identification photo taken of the Corn, LP sign at the entrance to the facility. **Photo 19** is a picture of the site identification photo cover sheet, and is the final photo for my CEI.

Other than the items specifically noted in this narrative, I observed no issues or potential violations. However, further EPA review may change or add to my findings. During this inspection, I reviewed all applicable regulatory requirements.

A revised Handler Information Report is attachment 16. A photo custody report is attachment 21. A photo log is attachment 22. Attachment 23 contains copies of the photos taken during my CEI. Attachment 24 contains contact prints of the photos taken. **Photos 16 and 17** show used oil signs that were added to the 6,000 gallon used oil storage tank during my CEI. **Photo** 22 shows the two used oil storage drums at the north end of the complex after used oil labels were added during my CEI. **Photo 23** shows the site identification photo and shows the location from which the GPS reading was taken. **Photo 24** is a picture of the site identification photo cover sheet, and is the ending photo for the inspection. Copies of photos taken during my CEI are included as attachment 18. Photo contact sheets are attachment 19.

Glenn Cherry
Civil Investigator SEE/NOWCC

Date: 12-3-12

**ATTACHMENTS**

1. Multimedia Screening Checklist (2 pages)
2. Confidentiality Notice (1 page)
3. Receipt for Documents and Samples (1 page)
4. RCRA Checklists (11 pages)
5. Area Map (1 page)
6. Satellite Images (4 pages)
7. Corn, LP Dry Mill Flow diagram (1 page)
8. Corn, LP Process for Producing Ethanol (2 pages)
9. Corn, LP Ethanol Process Flow Diagram (1 page)
10. Corn, LP Solid By-Product Management Plan (8 pages)
11. E-Mail Accompanying TestAmerica Analytical Report for Fly Ash Dated 1/4/12 (11 pages)
12. TestAmerica Analytical Report For Fly Ash Dated 7/31/12 (9 pages)
13. TestAmerica Analytical Report For Combustor Tram Dated 8/23/12 (10 pages)
14. Used Oil Manifests (2 pages)
15. Hazardous Waste Shipment Manifests (3 pages)
16. MSDS Forms for Smartwasher Ozzymat FL-3 (4 pages)
17. Handler Information Report (1 page)
18. Photo Custody Report (1 page)
19. Photo Log (2 pages)
20. Photos (18 photos, 18 pages)
21. Digital Photo Contact Sheet (3 pages)

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